D0 Status Report
1/30/2006

Taka Yasuda
Fermilab

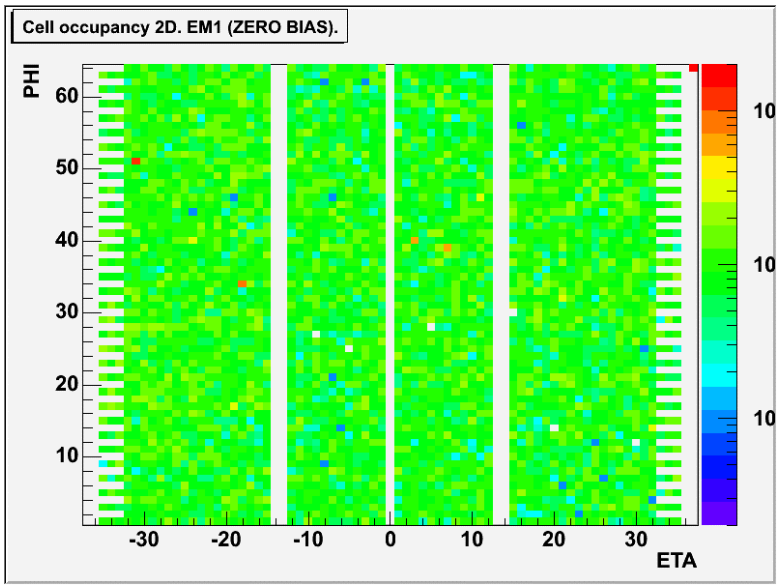
Data Taking for 1/23 – 1/29

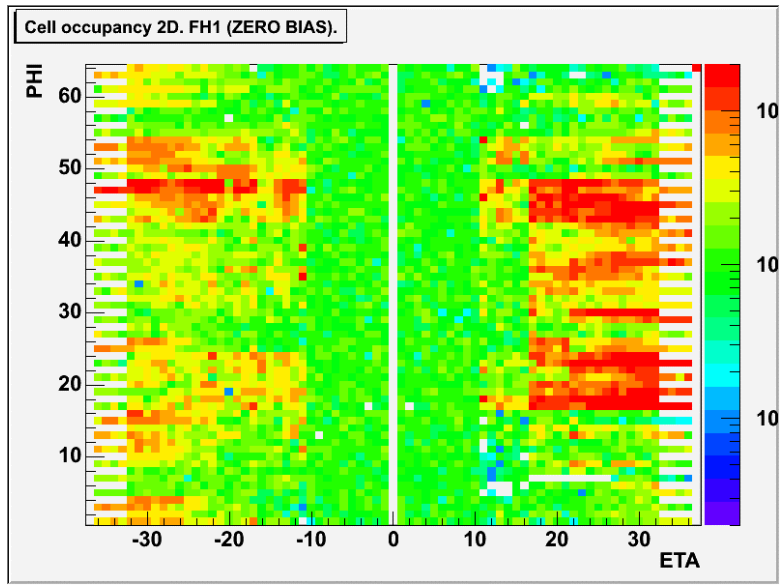
Day	Delivered	Recorded	Eff.	Comments
1/23 (Mon)				Detector closed. Unexpected Calorimeter noise reported.
1/24 (Tue)				Calorimeter noise investigation started.
1/25 (Wed)				Calorimeter noise investigation continued.
1/26 (Thu)				Calorimeter noise investigation ended without success. The noise went away.
1/27 (Fri)	0.09 pb^{-1}	0.07 pb^{-1}	81 %	
1/28 (Sat)	1.75 pb^{-1}	1.50 pb^{-1}	86 %	Forward muon special runs taken. FPD special runs taken.
1/29 (Sun)	2.00 pb^{-1}	1.55 pb^{-1}	78 %	Enhanced bias run for Run IIb trigger studies. 50 min downtime due to MDT crate x30.

1/23-1/29	3.84 pb^{-1}	3.12 pb^{-1}	81 %	

Notable Events

- 1/23 (Mon)
  - D0 detector closed.
  - FPD tunnel access.
    - Adjusted the speed of the motion for some pots.
    - Swapped a multiplexer board.
  - Unexpected Calorimeter noise reported.



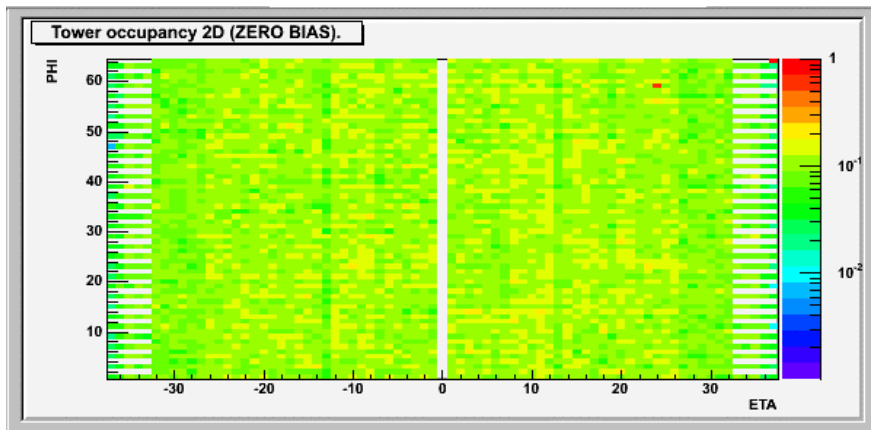


Notable Events

- 1/24 (Tue)
  - Controlled access for survey.
    - Interrupted to investigate the Cal noise.
  - Opened the D0 detector.
    - Investigated the noise path and source.
    - The noise level depends on how far the detector is opened.
      - The path seems to be between the central muon PDT and the Calorimeter by capacitive coupling.
- 1/25 (Wed)
  - Controlled access to investigate the Calorimeter noise.
    - Replaced the covers for the muon FEBs with more insulating material.
    - Hunted the source of noise by turning off the subdetectors.
      - Muon PDTs, ICD preamps, ICD HV, PDT HV + A layer Scintillators, Calorimeter CC preamps, SMT HDIs, interface boards, sequencers.

Notable Events

- 1/26 (Thu)
  - Controlled access to investigate the Calorimeter noise.
    - Observed a repetitive 5.6 μs pulse on the north EC cable.
    - Used an all band radio to locate the source and found two noisy ethernet hubs.
    - Turning them off had no effect on the noise.
  - Closed the detector in preparation for the beam with the noise problem unsolved.
  - The Calorimeter noise went away around 10:40 pm for no apparent reasons.



Notable Events

- 1/27 (Fri)
  - Controlled access to work on a Calorimeter readout problem.
- 1/28 (Sat)
  - Took a series of the forward muon special runs.
    - Efficiency measurements.
    - Run IIb firmware test.
  - Took FPD special runs in preparation for the low luminosity stores.
- 1/29 (Sun)
  - Took an enhanced bias run for Run IIb trigger studies.
  - Took runs for FPD timing scan.
  - 50 min downtime due to MDT crate x30 problems.

Calorimeter Noise

- We think we have a good idea on the noise path and source.
  - The central muon PDT are not well grounded because of the construction method used.
  - There seems to be capacitive couplings between the muon PDTs and the Calorimeter preamp crates.
  - We have reduced the capacitive coupling by adding an insulating material.
  - Turning off all of the subdetectors had no effect.
  - We are making a plan to improve the muon PDT grounding during the shutdown.
- Some aspects are not understood.
  - Why the hadronic calorimeter section only?
  - Why now?

- Thank the AD, especially the run coordinators, for accommodating our access requests.